

Abstract of the Disclosure

5 Amino acid and nucleotide sequences relating to the glutamate dehydrogenase (GDH) enzyme are described. The GDH enzymes described herein were discovered in the alga *Chlorella sorokiniana* in the form of seven different inducible isoenzymes. These isoenzymes are found in the algae as chloroplast-localized hexamers composed of alpha- and beta-subunits. Plants transformed with nucleotide sequences encoding the alpha- or beta-subunits of the enzyme show improved properties, for example, increased growth and improved stress tolerance. A heterohexamer having both  $\alpha$ - and  $\beta$ -subunits can have higher aminating:deaminating activity ratio than  $\alpha$ -homohexamers or  $\beta$ -homohexamers.